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Government's Efforts to Ensure the Sustainable Agricultural Lands: Case in the Traditional Irrigation System in Bali Province

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Abstract

Land (rice field) conversion has increased over the year at the national and provincial levels. This might threaten the government's program for achieving food security. In order to cope with this situation, the central government of Indonesia has issued the Law 41/2009 about the sustainable food farmland protection. However, this could not be implemented yet in the provinces, including in Bali. Its impact is the increased rice field conversion and uncertainty of food security program and might influence the existence of *subak* as a traditional irrigation system in Bali. This study is aimed to describe the *subak* system in rice farming development, understand the perception of farmers toward the Law, and to describe the effort which should be done by the government to achieve the effectiveness of the Law. Location of study is in Denpasar city as the capital of Bali province. Data collected by using interview, observation, and documentation techniques. Descriptive method is fully employed in the data analysis. The results of the study pointed out that the Law could not be effective yet to ensure sustainable food farmland protection and land conversion in the province. Perception of farmers is moderate toward the Law due to the specific reason, such as the limited size of land ownership, the small value of production gained from the rice farming, and the high tax of land (rice field). Several considerable efforts should be made by a government in cope with the land conversion, such as supporting the efficient cost of production, giving subsidy for inputs and equipment relating to rice farming, supporting the availability of irrigation water, making the higher price of rice, and others.

Keywords: Effective; Law; Rice field; Subak; Sustainable

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1. Introduction

The agricultural sector has still very important in economic development in the developing countries, including Indonesia due to its roles [1, 2]. The challenges which have been encountered in the agricultural sector is the need for land is being high in line with the increased population growth both in rural and urban areas aside from economic growth. The high demand for land, particularly in the city area might encourage competition of land use among the components of society. They usually use the productive land, such as rice fields for housing, industry, infrastructures, and other uses. Thus, uncontrolled land use in the city areas might bring about the functions of rice fields relating to the environment and social-economic aspects. Besides, the rapid urbanization in the countries (Hanoi, Vietnam) has accelerated the land conversion, particularly on the agricultural land [3]. In developing countries, including Indonesia, the conversion of agricultural land, especially paddy fields, has always been a threat to the efforts for achieving food security and food sovereignty such as rice. Nationally, the average conversion of paddy fields in Indonesia is about 150,000 ha per year. In some regions of Indonesia, one of the reasons the land conversion is the price of paddy field becomes higher compared to the production value gained from paddy field [4].

The high conversion of agricultural land, particularly rice fields to non-agricultural functions in Indonesia has proven to bring a negative impact on various aspects of life. Rice production has declined and might threaten the food security program in the country. This condition is worsened by the irrigation water problem at the farmer level. Another impact of rice field conversion is the farmers lost their jobs on rice farming and might lead to unemployment due to they do not have particular skill on the non-agriculture jobs. They have to look for a new job in the villages or cities after they sold their rice fields. In term of irrigation facilities, the government has loss high investment in agricultural infrastructure (irrigation) constructed such primary and secondary canals. Several experts found that the reduced agricultural lands (rice fields) for the settlement and industrial uses have become a threat and challenge for the government in order to achieve the security food program and self-sufficiency of rice [5, 6]. Therefore, it is necessary to control the conversion of agricultural land through the particular policy as an effort to support the achievement of food security and sovereignty. Besides, this policy should be able to improve the welfare of farmers and society in general.

Based on the considerations referred to above, the Government of Indonesia has stipulated the Law of the Republic of Indonesia Number 41 of 2009 about the Sustainable Food Farm Land Protection. Specifically, this law is intended to ensure that certain rice fields should only be used and sustainable for appropriate food agriculture activities. In the case of Bali, farm management in rice fields is organized in a *subak* system. *Subak* is the water user association which is managed under the traditional irrigation system. In Bali province, *subak* as an irrigation system constitutes the farmers' organization of water management with the *Tri Hita Karana* philosophy [7, 8, 9]. One of the main tasks of subak is to distribute and allocate irrigation water to rice fields. It has one water source, one or more temples, and autonomy to organize its organization based on its internal regulation or locally called awig- awig.

The increased economic growth cannot be denied significant impact on the utilization of land including wetland for non-agricultural activities. The data show that in 2009 the total rice field in Bali was recorded at 81,931 ha, whereas in 2012 the total land area was 81.625 Ha. This means that in the period of 4 (four) years from 2009 s / d in 2012 recorded the transfer of wetland function by 306 ha (0.37%) or about 76.5 ha/year. Even in previous years was calculated the extent of the conversion of rice fields in Bali to 750 ha/year. For instance, there has been a *subak* reduction of three *subak* in Denpasar City since 2003. Currently, the conversion of rice fields has increased and been difficult to control by the government. This has happened not only in the city of Denpasar but also in other cities in Bali including in rural areas. Therefore, this study intends to describe the *subak* system in rice farming development, understand the perception of farmers toward the Law, and to describe the effort which should be done by the government to achieve the effectiveness of the Law 41/2009.

2. Material and Methods

This study was conducted in Bali province as one of the provinces in Indonesia. This province was purposively selected due to the economic growth in Bali is upper than a national level. Aside from this, there has been the rapid growth of tourism development as a prime source of income in the province of Bali which might contribute to land conversion, particularly the rice field. Several key respondents were interviewed in this study. They are government officials (The Offices of Agriculture, Water Resources Department, and Tourism), lecturers, Non-Government Organizations (NGOs). Data collected by using various techniques, namely interview, survey, observation, documentation and Focus Group Discussion (FGD). Besides, it was also taken samples by using simple random sampling. There were 150 farmers in

Denpasar city selected as samples by using simple random sampling. Information and data were collected by using interview, observation, and documentation techniques. Questionnaire and interview guide were prepared to bring to the site in order to get information and data needed to this study. FGDs conducted were involved government staff at the province and regency levels (The Offices of Agriculture, Water Resources Department, and Tourism), academicians, farmers, and other stakeholders.

The perception of farmers was measured by giving scores based on the scale of Likert. There are five categories of samples' perception with the interval 16 formulated as follows.

$$i = \frac{\text{Maximum score} - \text{minimum score}}{5} = \frac{100 - 20}{5} = 16$$

Notes: i = Interval

The maximum score is 100 % counted by the value of 5 (as a maximum value of answer)

The minimum score is 20 % counted by the value of 1 (as a minimum value of answer)

In relation to the interval of perception calculated above, the perception of farmers could be categorized as shown in Table 1.

Table 1.
Category of farmers' perception toward the affectivity of the Law

No	Category	Score achievement (%)
1	Very good	>84 – 100
2	Good	>68 – 84
3	Moderate	>52 – 68
4	Bad	>36 – 52
5	Very bad	20 – 36

In this study, the analysis data was fully done by employing a descriptive method in order to give an interpretation of the variables in line with the objectives of the study. There is no statistical method in the data analysis.

3. Results and Discussion

Subak and its Functions in Bali

The existence of *subak* in Bali cannot be separated from the agricultural and rural development. The entire rice fields cultivated by farmers in Bali are fully under the *subak* management. As a social and cultural institution, *subak* might not only have a function in term of social and culture but also functions to the other aspects and benefits to farmers and other people [10]. The preservation of *the subak* system related to land conversion becomes an integral part also with the objective of spatial planning in a region. The rice field of *subak* has multifunction as shown in Figure 1.

These multifunctions of rice fields in the subak system look relatively similar to the functions of rice fields in other developing countries [11], which include: (i) environmental function; (ii) social function; (iii) food security function; (iv) economic function; and (v) cultural function. Meanwhile, some experts also pointed out that agricultural land functions not only as a food producer but also has functions in terms of flood mitigation and soil erosion control as parts of other ecological functions, including its

function to the biodiversity maintenance [12, 13, 14].

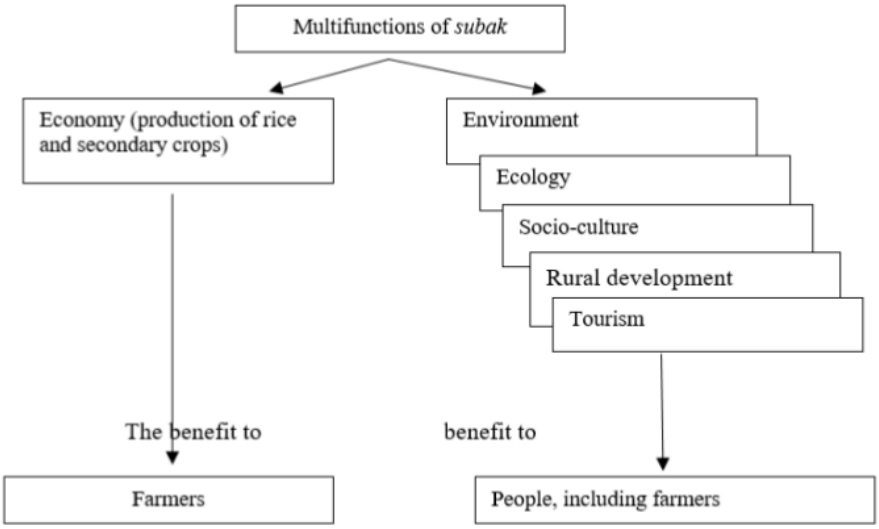

Figure 1. Multifunctions *subak* in Bali

Taking into account the multifunctions of subak to date, farmers and subak are not rewarded directly for the benefits enjoyed by non-farmers. [15] even firmly says that while the wider community enjoys these functions without having to issue so that in the future it needs a reward given to farmers. This condition is important to ensure the subak to obtain economic incentives in the preservation of the irrigation system while simultaneously suppressing the wetland area. Rice field is a part of public goods because it provides direct and indirect functions and benefits to the public. This benefit has also been seen from the existence of rice fields in the subak environment in Bali through the philosophy of harmonization and togetherness among the members [16]. The philosophy of *subak* constitutes a mean of cultural preservation in Bali. This has been proven that UNESCO has awarded the subak as a world cultural heritage since 2012. In addition, the rice field could be a beautiful place for tourism activity as an ecotourism or agritourism. The culture in farming activity on the rice field, especially ritual ceremonies, could make particular interest for the visitors. At least, there are 15 kinds of ritual ceremonies conducted by farmers at the *subak* level within one season of rice planting [7]. This means that subak has a cultural function which contains values and social capital that function in harmony management organization subak [16].

The impact of land (rice field) conversion on subak area not only reduces food production but furthermore provides other impacts such as environmental ecological degradation that result in community life. As an illustration in the city of Denpasar and several other cities in Bali, when the rainfall is high enough in a few hours could cause flooding to the road after the high conversion of land (rice fields). This condition occurs because there is no longer water storage function due to rice field have converted its functions as happened also in other areas.

Main Regulations of Government to protect sustainable agriculture and subak

The existence of rice field in Indonesia including Bali province has been threatened by the land conversion caused by various factors. One of the effects of this land conversion is decreased land (rice

field) size area, thus it makes an impact on the production of rice as a staple food in Indonesia. The small size of the rice field might not economically efficient due to a small economical scale of farm management owned by farmers. Therefore, efforts to control the conversion of rice field need to be regulated through legislation in favor of farmers and other citizens in accordance with the spatial arrangement in each region. One of the laws issued by the central government is Law of No.41 / 2009 on the Sustainable Food Farm Land Protection.

In Indonesia, the main regulations issued by the central government are the form of law, government regulation and regulations of ministers. In this study, these regulations are: (1) Law No.41/2009 about the Sustainable Food Farm Land Protection; (ii) Government regulations No. 1/2011 about the Stipulation and Land Conversion of Sustainable Food Farm Land Protection; (iii) Government Regulations No. 12/2012 about the Incentive of Sustainable Food Farm Land Protection; (iv) Government Regulations No. 25/2012 about Information System on Sustainable Food Farm Land Protection; and (v) Government Regulations No. 30/2012 about Financing of Sustainable Food Farm Land Protection. The entire of the government regulations cited above are made on the basis of the Law N0.41/2009. In other words, this law is being an umbrella for the regulations. The law and regulations cited above are still at the national level.

The main objectives of implementation of the Sustainable Food Farm Land Protection are as follows: (i) protecting the area and agricultural land on a sustainable basis; (ii) ensuring the availability of sustainable agricultural land; (iii) realizing self-reliance, resilience, and food sovereignty; (iv) protecting the ownership of agricultural land belonging to farmers; (v) increasing the prosperity and welfare of farmers and communities; (vi) improving farmer protection and empowerment; (vii) improving the provision of employment for decent living; (viii) maintaining an ecological balance; and (ix) realizing the revitalization of agriculture.

In the Law 41/2009, government at the levels of national, provincial and district provide incentives to farmers who are involved in the program on the Sustainable Food Farm Land Protection. The forms of incentive are: (i) getting lighter of land and building tax; (ii) having development of agricultural infrastructure on the land; (iii) gaining finance for research and development in the relation to seeds and superior varieties; (iv) getting easier in accessing information and technology; (v) having agricultural production facilities and infrastructure; (vi) getting a guarantee of the issuance of agricultural land certificates through the sporadic and systematic registration of land; and (vii) getting award for those who have high achievement. These incentives should be put in the form of specific budget allocations at the levels of national, provincial and district in accordance with the laws and regulations and legislation as well.

It is nearly 10 year of the issuance of the law, the land conversion in Bali, however, was still relatively high. Local government could not stop the conversion of land, particularly the rice field. The land (rice field) conversion in Bali province in the period of 16 years had been about 6,260 ha or 7.29 % (there was 85,776 ha in 2000, and there was 79,526 ha in 2016). In other words, the average rice field conversion within 16 years was about 390,625 ha per year. This condition should be seriously controlled by the government to make a slow rate of rice field conversion. If not, the food security program of government might be threatened due to the reduced production of rice. The Law 41/2009 seems to not be effective in controlling the rice field conversion in Bali province. Local government has not yet followed up the content of The Law in the local regulation. Actually, the local governments in Bali (at

the provincial and district levels) already have had the regulation, such as Spatial Plan Regulation regulating the green open space in certain areas. Economic and political interests have strong influences in the implementation of the spatial plan regulation. The economic reason for the development in the province has often forced the government to allow the economic actors to use the lands including the rice fields located within the area of the spatial plan. They usually make construction for the industry, real estate and others, such as road accessing to the buildings.

While, the Government regulations No. 1/2011 about the Stipulation and Land Conversion of Sustainable Food Farm Land Protection has objectives to (i) realize and ensure the availability of sustainable food farmland; (ii) control the conversion of sustainable food farmland; (iii) realize the independence, resilience, and national food sovereignty; (iv) increase farmers' empowerment, income, and welfare; (v) provide business certainty for farmers; (vi) realize ecological balance; and (vii) prevent the idle of agricultural infrastructure investment. This regulation has not also implemented yet at the levels of province and district in Indonesia, including in Bali province and in nine districts under Bali province. There is no local regulation relating to the sustainable food farmland at the provincial and district level. This means that the law and government regulations stipulated at the national level could not be implemented in the province. One of the consequences is the land (rice field) conversion could not be arranged well in line with the law and government regulation.

The other regulations, Government Regulations No. 12/2012 about the Incentive of Sustainable Food Farm Land Protection; Government Regulations No. 25/2012 about Information System on Sustainable Food Farm Land Protection; and Government Regulations No. 30/2012 about Financing of Sustainable Food Farm Land Protection, are also still looking at the toothless tiger. At the provincial and district levels, the local governments have no local regulation about the areas or rice fields which would be defined as the sustainable food farmland. This becomes one of the government' hindrances in controlling the land (rice field) conversion in the province. By interviewing of the Head of Agriculture Office, it is pointed out that the farmers might be hesitated to involve their own rice field as a part of sustainable food farmland area. They perceived that it would be "trap" for farmers not to sell the land. If the condition of rice farming might not give proper economic incentive for farmers, they prefer to sell or rent their rice field.

Perception of Farmers on the Affectivity of Law Implementation

Based on the survey on the samples (50 samples of undergraduate students and graduate students; and 40 farmers), it was found that the average perception of them was moderate. The score was 62.50% out of maximum score with the interval scores between 48.80 % till 74.20 %. The distribution of sample regarding their perceptions is shown in Table 2.

Table 2.
Category of farmers' perception toward the affectivity of the Law

No	Category	Frequency (person)	Percentage (%)
1	Very good	0	0.00
2	Good	12	24.00
3	Moderate	31	62.00
4	Bad	6	12.00
5	Very bad	1	2.00
	Total	50	100.00

Source: Primary data

Looking at the data shown in Table 2, it indicates that 62.00 % farmer had moderate perception toward the affectivity of implementation of the Law 41/2009. It was also seen that 24 % of the farmer had a good perception. The small percentage of a farmer having good perception suggests that the Law 41/2009 might not be effective to control the land (rice field) conversion. According to most farmers, they might not have good interest to involve in the government program under the Law. Some reasons of why they did not ensure the effectivity of the Law were: (i) the ownership of land is relatively small; (ii) the value of production gained from the rice field is regarded still small; (iii) the tax of land is very high; (iv) fragmentation of land; (v) the high need of cash for the family; (vi) construction of infrastructures; (vii) housing development; and (viii) low enforcement of law by the government. Distribution of samples based on the reasons making the land (rice field) conversion might be not difficult to control is shown in Table 3.

Table 3
Farmers' reasons making the land (rice field) conversion

No	Reasons	Frequency (person)	Percentage (%)
1	Small ownership of land Small value of production	41	82.00
2		32	64.00
3	High land tax	36	72.00
4	Fragmentation of land	21	42.00
5	High need of cash	24	48.00
6	Construction of infrastructures	28	56.00
7	Housing development	18	36.00
8	Low enforcement of a law	20	40.00

Source: Primary data

Note: A farmer had more than one reason

The reasons for farmers cited above indicate that they have pessimistic to the effectivity of Law implementation relating to the protection of sustainable food farmland. According to the data analysis, the average rice field ownership of farmers in Bali province is about 0.35 ha. This size is not efficient for the economic scale of rice farming production, thus the income gained is relatively small. Whereas the prices of inputs (production cost) have increased every year. Another problem encountered by farmers living in Denpasar city is a high tax of land (rice field). The government has defined the tax on the basis of location. This is not under the production value of the rice field. Therefore, this condition might be a big burden for the farmers. The high tax of land is regarded as the "ghost" due to the farmers must pay it every year. In another side, the price of land (rice field) in Denpasar city is very expensive. High tax likely becomes a push factor, while the high price of land should be a pull factor on the land conversion.

Fragmentation of land (rice field) could be happened due to the inheritance system in Bali province including in Denpasar. The parents would deliver the title of land to their sons after they get married. The small land owned by the farmer becomes smaller as a result of fragmentation. In the city, the family of farmers has had increased needs for their life, such as for domestic, schooling, others. Low income gained from rice farming might not sufficient to fulfill their needs. This condition hence makes farmers sell their land to earn cash money. Construction of infrastructures and housing could be difficult to control due to the economic growth and population growth. Denpasar is a center of economic development in Bali province (tourism and industry development). One of the consequences is the increased urbanization due to the people coming from other districts and islands to look for jobs.

Law enforcement of government was regarded not so good since the government let the investors and others seize the rice field for the building. In some cases, it was found that the government allows them to construct within the green spatial area. This construction of buildings (house, mall, shop, road, etc.) often made a problem to the irrigation system of *subak*. Irrigation water could not run well since the canal was not functioned well. The canals of *subak* have been within the area of housing, have been blocked by the construction. Besides, the sedimentation and garbage have also been a new problem on the canals.

Actually, the great potential for farmers as *subak* members according to the Law 41/2009 is seen in the provisions of Article 61. It is clearly stated that the central government and regional governments shall protect and empower farmers, farmer groups, farmer cooperatives, and farmers' associations. The protection of the farmers is in the form of guarantee as set forth in Article 62 of Law 41/2009 which includes (i) favorable price of food commodities; (ii) obtaining agricultural production and production facilities; (iii) marketing of basic food crops; (iv) prioritization of domestic agricultural products to meet national food needs; and / or (v) indemnification due to crop failure. However, these guarantees had not been achieved yet at the farmer level. Until this study, there is no rice field of *subak* has defined yet as an area of protected sustainable land by the government based on the Law 41/2009.

In addition, there are also several provisions of farmers empowerment mandated in more detail on Article 63 of Law 41/2009. These are among other things: (i) strengthening of farmer institutions; (ii) having extension and training for quality improvement of human resources; (iv) providing finance/ working capital and agricultural facilities; (v) giving provision of agricultural land ownership credit; (vi) establishment of banks for farmers; (vii) providing education and health facilities for farm households; and (viii) providing facilities to access science, technology, and information for farmers.

Efforts to make an effective implementation of the Law 41/2009 in Bali province

Essentially, the development of rural communities, mostly farmers, is directed to encourage and create the agricultural sector as an attractive business opportunity and provide economic benefits for them. The economic benefits for the farmers can be naturally prevented the conversion of irrigated land to non-agricultural land. Subak as one of the farmers' organizations actively involved in agricultural development in Bali requires the integration of agricultural development which is not only focused on on -farm activities, i.e. increasing land and crop productivity, but it needs to be equipped with various efforts in providing facilities and adequate infrastructure of production by utilizing local resources [17, 18]. In addition, it is also necessary to manage on-farm more productively and off-farm activities related to processing and marketing of the product in order to increase farmers' income and farmer's welfare [19, 20]. The economic benefit is one of the most important incentives for the farmers to sustain and keep their rice farming activity and protect the rice field conversion.

The protection of agricultural land is an integral part of spatial planning in the province and districts. This strongly relates to the carrying capacity of the region. The carrying capacity is an important part to regulate the balance between the human environment, other living beings and their physical environment [21]. One of the efforts to balance the utilization of natural resources and the environment is through proper spatial arrangement based on environmental function preservation. Thus, the protection of agricultural land is done by determining the areas of food agriculture that brings guarantee its productivity and economic incentive for the main actor, that is, farmer. Hence, the determination of the food agriculture land protection (rice fields of *subak* area) should consider many dimensions, such as

social, economic, physical and environmental aspects.

Concerning the causes of land (rice field) conversion and the articles of Law 41/2009, there are several efforts which should be conducted by the government. Among other things are: (i) support efficient production cost on farming; (ii) provide subsidy for agricultural inputs and equipment; (iii) support the availability of irrigation water and infrastructure; (iv) ensure the proper price of husked rice; (v) provide agricultural insurance; (vi) give subsidy on tax for rice field; (vii) issue the local regulations; and (viii) law enforcement.

Efficient production cost for farming on the rice field could be done by introducing the agricultural technologies. Introduction to these technologies should be managed by the agricultural extension agents through extension and training programs. The extension and training are parts of the farmers' empowerment as an effort to improve the ability of farmers in the implementation of better farming, better business consisting of processing and marketing of agricultural products. Training could be done in the forms of on-trial training and participatory training at the farmers' level. The good agricultural practices should be introduced to farmers in order that they understand and apply on their rice field. This is addressed to make the efficient cost of production in the rice farming and other crops on the rice field.

Government's subsidy was still very important for the smallholder farmers in Bali as also found in the developing countries [22, 23]. This is fully aimed at anticipating the high price of agricultural inputs needed by farmers. The recommended inputs should be applied by farmers to increase the productivity of land and crops. Subsidy provided government might support the improved efficiency of the production cost of farmers in their farming. Aside from this, the subsidy would be an incentive for farmers to their farming in order to improve their productivity and income [24, 20].

Irrigation water constitutes an essential factor in rice farming development. Farmers are strongly dependent on the availability of water, especially during dry season. The decreased water availability within dry season might contribute the difficulty for farmers to cultivate rice field (land preparation, and maintenance of rice transplanted). In order to ensure water availability, the government should improve irrigation facilities (weir, canal and the likes). According to farmers, land and water could not be separated in the rice farming activities. In line with the users of water at the source level, water is not only for irrigation (rice field), but also for non-irrigation uses, such as domestic, industrial, and others. Competition of water has happened among the users, and the farmers often being the loser. Therefore, the government should give certainty to farmers relating to irrigation water. If not, farmers could not cultivate their rice field and thus could not gain income. This condition might push them to sell their rice fields.

Proper price of rice at the farmers' level is being a significant factor to have more intensively rice farming. Farmers need increased income gained from their harvested rice through the higher price. Presently, they have no strong bargaining power to sell their rice over the buyers. Its consequence is their revenue might not high and would be a disincentive for them. Therefore, it should be a basic policy from the government to increase the price of rice. One of the efforts is establishment government enterprise unit which has a function to directly buy rice of farmers. The prices offered by the government must be higher than the market price or the buyers. In other words, the government should provide a subsidy at the downstream or output of rice farming development. This higher price of rice might be a very strong incentive for farmers to sustain their farming. Thus, it could be expected to sustain the rice field and protect land (rice field) conversion.

Agricultural insurance has been developed in several countries. Implementation of this insurance is regarded as an important means to achieve the objectives of agricultural sector [25, 26]. Rice farming conducted by farmers often encounter the threats before harvesting contributing to the failure. The insurance on agriculture or rice farming is being a very important part to mitigate the high risk on the crop (rice) planted by farmers. Farmers' characteristics might influence their participation in agricultural insurance [27]. Through this effort, the farmers might not worry about the failure of their rice farming. According to the Law about Agricultural Insurance, the claim of failure on rice farming is IDR 6,000,000/ha. This amount refers to the calculation of production costs spent by a farmer. It is suggested to the government that the amount of claim should not be based on the cost of production, but should be under the calculation of production value. Therefore, the farmers would have the interest to involve in the insurance program due to the claim is higher than IDR 6,000,000. Implementation of agricultural insurance is actually stated in the Law No 19/2013 about Protection and Empowerment of Farmers.

The tax of rice fields is regarded expensive by smallholder farmers in Bali due to its basis on the location, not under the production value of land. As mentioned above, the tax of rice field becomes one of the pushed factors toward the land conversion. In another side, the price of land (rice field) has been increased over the year. Therefore, it is needed to consider the subsidy of tax on a rice field. The government should provide a subsidy for farmers relating to tax payment every year. If possible, the government might take a tax exemption policy for the smallholder farmers. This might enlighten the burden of the production cost of rice farming.

In order to implement the Law 41/2009 issued by the central government, the local government must follow up to issue local regulations based on the cited law. In this regulation, the government should make a comprehensive or holistic analysis of the farmers' socio-economic and other dimensions of development. Farmers should be given an understanding of the regulation and its objectives. The objectives informed are not only for the government concern, environmental concern but also for the farmers' benefits. The incentives and disincentives for farmers should be clearly stated to make sure that the regulation felt fruitful for them and others. The existence of incentives and disincentives as a significant instrument to encourage and ensure farmers in continuing the sustainable food farmland protection policy since they could increase their productivity. Defining the fixed areas of rice field which might be covered in the program of sustainable food farmland protection should be based on the availability of supporting factors for rice farming development, such as irrigation, farm road, and others.

The regulation which would be issued by the local government regarding the sustainable food farmland protection must be strictly implemented. Socialization of this regulation and other relevant regulations must be intensively conducted to the people (farmers and non-farmers). They should understand the essence and objectives of the regulations. Therefore, law enforcement must be performed by government in order to achieve the objectives of regulations. Law enforcement is one of the strongest weapons for the realization of the goals and objectives of sustainable food farmland protection policy at the national, provincial and district levels. This condition is very important in the effort to control the conversion of rice field and at the same time preserve the existing *subak* irrigation system in Bali.

4. Conclusion

The Law RI No 41/2009 is one of the instruments which is expected to ensure the sustainable food farmland protection. It, however, could not function well due to there is no follow up regulations issued by local government. Meanwhile, farmers have problems and challenges toward their rice fields in the

more complex economic development in the country. Farmers have no good perception to the Law and also have no good interest to involve the program under the Law. Therefore, the effectivity of the Law is not achieved well due to some reasons. Among other things are the ownership of land is relatively small, the value of production gained from the rice field is regarded still small the tax of land is very high. There are several efforts should be taken by a government in relation to making an effective implementation of the Law. These include supporting efficient production cost on farming; providing a subsidy for agricultural inputs and equipment; supporting the availability of irrigation water and infrastructure; ensuring the proper price of husked rice; providing agricultural insurance; giving subsidy on tax for rice field; issuing the local regulations; and conducting law enforcement.

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